Brighton and Sussex University Hospitals NHS Trust

Pelvic injuries

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Pelvic injuries

Background

Pelvic injuries are uncommon in children. When they do occur, the most common types are avulsion and isolated pelvic ring fractures which may be stable or unstable.

Life-threatening haemorrhage caused by pelvic fractures is uncommon in children and rarely requires operative treatment.

Pelvic injuries usually involve high-energy mechanisms, such as RTC / pedestrian vs car, and are likely to be associated with injuries to other organs:

- Intra-abdominal / thoracic
- Genito-urinary
- Neurological

Management of pelvic injuries

On arrival to the ED, assess airway, breathing, circulation and disability as per APLS guidelines.

Identify and treat concomitant life threatening injuries in the primary survey.

Assessment for pelvis injury:

- complaining of pain in the pelvis, lower back or hips
- abnormal position of lower limbs or pelvic asymmetry
- flank, perineal or scrotal bruising
- Blood at urethral meatus
- Haematuria or bleeding PR or PV
- tenderness of the bony pelvis on GENTLE pressure over the anterior iliac crests. Do this once, to minimise the risk of dislodging clots and re-starting bleeding, and ONLY in a **conscious patient** in the **secondary** or **tertiary survey**.

Contrast-enhanced **CT scan of pelvis** and abdomen is imaging modality of choice in pelvic injury.

Indications for pelvic splint:

Apply pelvic splint (the SAM splint) if there is clinical suspicion of pelvic injury based on history and examination.

If a pelvic fracture is identified:

- Leave the splint in place
- Treat concomitant injuries
- Refer to Orthopaedic team who will decide on definitive treatment in conjunction with the Paediatric Surgical team.
- Do not catheterise until assessed by Paediatric Surgery – further investigation may be required.

The majority can be managed conservatively

- If admitted to RACH, nurse on HDU with continuous monitoring
- Analgesia is extremely important – consider PCA / NCA
- May require transfer to secondary centre, particularly if concomitant injuries.

Applying the pelvic splint

If splint applied pre-hospital, leave in place. Check position and assess.
In children with suspected pelvic injury, moving and rolling the child should be kept to a minimum.
Ideally, the splint should be applied to skin, not over clothing

Two-person technique; should be performed by people trained in the application of the splint.

1. Unroll splint and place underneath the patients feet
2. Slide towards the patient's head and if necessary, elevate buttocks to facilitate correct placement
3. The splint should be at the level of the greater trochanters and no higher.
4. One person holds the orange handle and the other tightens the splint until a click is heard.
5. The splint is fastened using the Velcro

The endpoint of the splint is to bring the pelvic bones into a near anatomical position. The straps should therefore not be tightened "as much as possible" as this may serve to open a posterior disruption, but rather tightened to achieve anatomical pelvic alignment.

Removing the pelvic splint

The splint should only be removed

- when other means of stabilisation / splintage can be initiated if required
- after radiological imaging excludes instability (imaging should be performed through the splint).
- If pelvic injury is felt to be unlikely based on thorough clinical assessment
    - The patient is assessable – conscious, no distracting injuries, no drugs or alcohol
    - Clinical assessment is normal with no pain, even if pelvic splint has been applied.

If there is haemodynamic instability on removal, replace the splint.